



# SLOVENSKI STANDARD

## SIST EN 912:2012

01-januar-2012

Nadomešča:

SIST EN 912:2000

SIST EN 912:2000/AC:2002

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### Vezna sredstva za les - Specifikacije za moznike za les

Timber fasteners - Specifications for connectors for timbers

Holzverbindungsmittel - Festlegungen für Dübel besonderer Bauart für Holz

Éléments de fixation - Spécifications des connecteurs pour structures en bois

Ta slovenski standard je istoveten z: **EN 912:2011**

### ICS:

21.060.99	Drugi vezni elementi	Other fasteners
91.080.20	Lesene konstrukcije	Timber structures

**SIST EN 912:2012**

**en,fr,de**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 912**

July 2011

ICS 21.060.99; 91.080.20

Supersedes EN 912:1999

English Version

**Timber fasteners - Specifications for connectors for timbers**

Organes d'assemblage pour le bois - Spécifications des  
assembleurs pour bois

Holzverbindungsmitel - Spezifikationen für Dübel  
besonderer Bauart für Holz

This European Standard was approved by CEN on 17 June 2011.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This document (EN 912:2011) has been prepared by Technical Committee CEN/TC 124 “Timber structures”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2012, and conflicting national standards shall be withdrawn at the latest by January 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 912:1999.

The following significant technical changes have been introduced in the new edition of this European Standard:

- a) the EN 912:1999/AC:2000 corrigendum is included,
- b) modifications regarding newer EN reference standards, steel material and tolerances.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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## 1 Scope

This European Standard specifies the dimensions and the materials of certain well-established connectors for use in joints between members in load-bearing timber structures.

For data on strength and deformation properties of joints made with the connectors, reference is given to EN 13271.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1561, *Founding — Grey cast irons*

EN 1562, *Founding — Malleable cast irons*

EN 1706, *Aluminium and aluminium alloys — Castings — Chemical composition and mechanical properties*

EN 10025, *Hot rolled products of structural steels (all parts)*

EN 10131, *Cold rolled uncoated and zinc or zinc-nickel electrolytically coated low carbon and high yield strength steel flat products for cold forming — Tolerances on dimensions and shape*

EN 10139, *Cold rolled uncoated mild steel narrow strip for cold forming — Technical delivery conditions*

EN 10140, *Cold rolled narrow steel strip — Tolerances on dimensions and shape*

EN 10143, *Continuously hot-dip coated steel sheet and strip — Tolerances on dimensions and shape*

EN 10268, *Cold rolled steel flat products with high yield strength for cold forming — Technical delivery conditions*

EN 10346, *Continuously hot-dip coated steel flat products — Technical delivery conditions*

EN 13271, *Timber fasteners — Characteristic load-carrying capacities and slip-moduli for connector joints*

## 3 Terms and definitions

For the purpose of this document, the following terms and definitions apply.

### 3.1

#### **connector**

device generally consisting of a plate, toothed-plate or ring which, when partly embedded in each or in one of the contact faces of two members and held together by a connecting bolt, is capable of transmitting a load from one member to another

### 3.2

#### **double-sided connector**

connector symmetrical in cross-section and embedded into each contact face of two adjacent timber members

**EN 912:2011 (E)****3.3****single-sided connector**

connector embedded into a timber contact face only on one side

**3.4****ring connector**

double-sided connector formed as a closed ring or a ring cut at one place on its circumference

**3.5****plate connector**

single-sided connector made of a circular plate with a flange along the circumference of one side of the plate

**3.6****toothed-plate connector**

connector made of a plate with triangular teeth along the edges of the plate or with spikes on the plate; a toothed-plate connector may be double-sided or single-sided

**4 Symbols**

In this European Standard, the following symbols are used with suitable subscripts where necessary:

$a$  width of cut; distance; offset distance, in millimetre;

$a_1$  length of tongue; distance between screw holes, in millimetre;

$a_2$  depth of tongue; depth of countersink, in millimetre;

$a_3$  depth of slot, in millimetre;

$d_1$  diameter of centre hole (bolt-hole), in millimetre;

$d_2$  diameter of screw holes; diameter of nail holes; diameter of inner teeth circle, in millimetre;

$d_3$  outside diameter of hub; diameter of outer teeth circle, in millimetre;

$d_4$  diameter of perforations, in millimetre;

$d_c$  diameter, diameter of plate;

$h_1$  height of straight portion; height of straight portion outside of flange; height of hub above plate, in millimetre;

$h_c$  height; total height, in millimetre;

$r$  radius, in millimetre;

$t$  thickness, thickness of plate; maximum thickness of plate and flange, in millimetre;

$t_1$  minimum thickness of plate; thickness of plate, in millimetre;

$t_2$  thickness of notch, in millimetre.



## 5 Requirements

### 5.1 General

Connectors shall be marked in accordance with Clause 6.

Depending on the environmental conditions the connectors shall be given an anti-corrosion treatment of a type to be agreed between the purchaser and the manufacturer.

### 5.2 Classification and requirements of connectors

The connectors are classified into the following four groups:

- Group A Ring connectors; see Annex A;
- Group B Plate connectors; see Annex B;
- Group C Toothed-plate connectors; see Annex C;
- Group D Other connectors; see Annex D.

The annexes A to D specify the dimensions and specifications for materials for these 4 groups.

## 6 Marking

Every delivery unit shall be marked by the manufacturer. The marking shall contain the number of this European Standard, i.e. EN 912 and the number of the connector according to the annex to this European Standard. Furthermore, the nominal dimension (e.g. the nominal diameter) shall be marked.

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## Annex A (normative)

### Specifications for ring connectors

#### A.1 Type A1

##### A.1.1 Description and dimensions

A ring connector of type A1 (see Figure A.1) is a closed ring connector with a cross-sectional area like a lens. The dimensions shall comply with Table A.1.

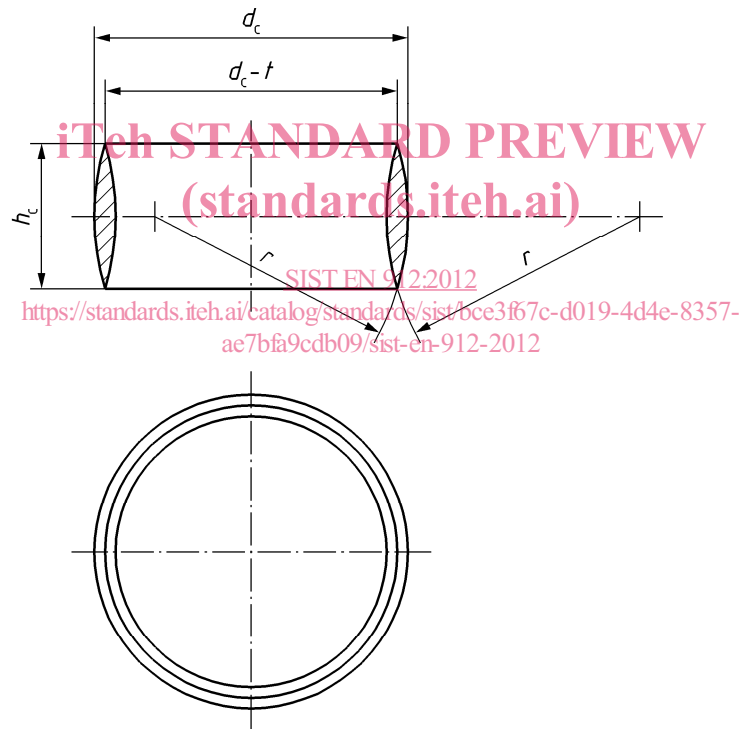


Figure A.1 — Connector of type A1

Table A.1 — Dimensions of connectors of type A1

Dimensions in millimetres

Diameter $d_c$	Height $h_c$	Thickness $t$	Radius $r$
65	30	5	50
80	30	6	50
95	30	6	60
126	30	6	60
128	45	8	60
160	45	10	60
190	45	10	60
Tolerances on all dimensions: $\pm 0,5$ .			

**A.1.2 Material**

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Ring connectors of type A1 are made of aluminium casting alloy EN AC-ALSi9Cu3(Fe) according to EN 1706.

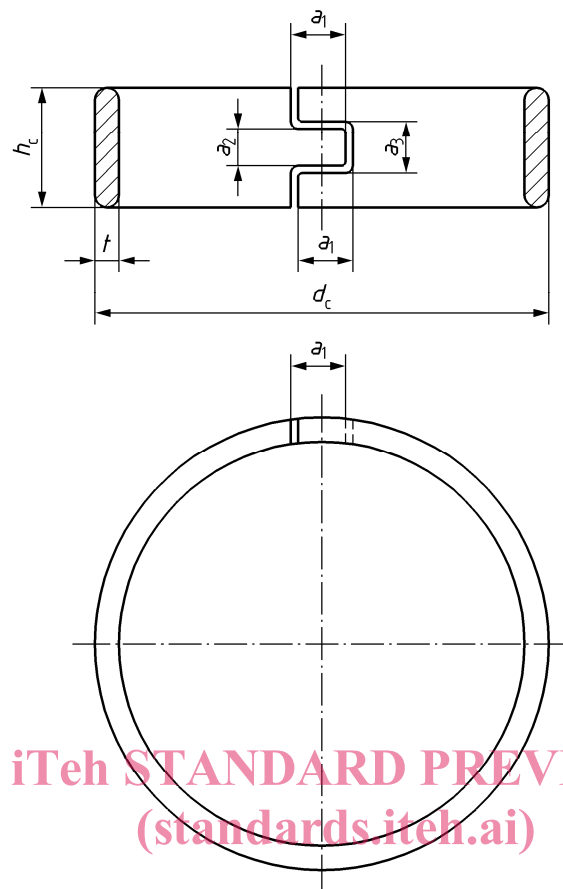
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**A.2 Type A2**

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**A.2.1 Description and dimensions**

A ring connector of type A2 (see Figure A.2) is a connector with parallel sides cut at one place on its circumference to form a tongue and a slot. The dimensions shall comply with Table A.2.



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Figure A.2 — Connector of type A2

Table A.2 — Dimensions of connectors of type A2

Dimensions in millimetres

Nominal diameter	Diameter	Height	Thickness	Length of tongue	Depth of tongue	Depth of slot
	$d_c$	$h_c$	$t$	$a_1$	$a_2$	$a_3$
64	72,0	19,0	4,1	9,0	6,5	7,0
Tolerances: Diameter $d_c$ $\pm 0,75$						
Thickness $t$ $\pm 0,10$						
Other dimensions $\pm 0,25$						

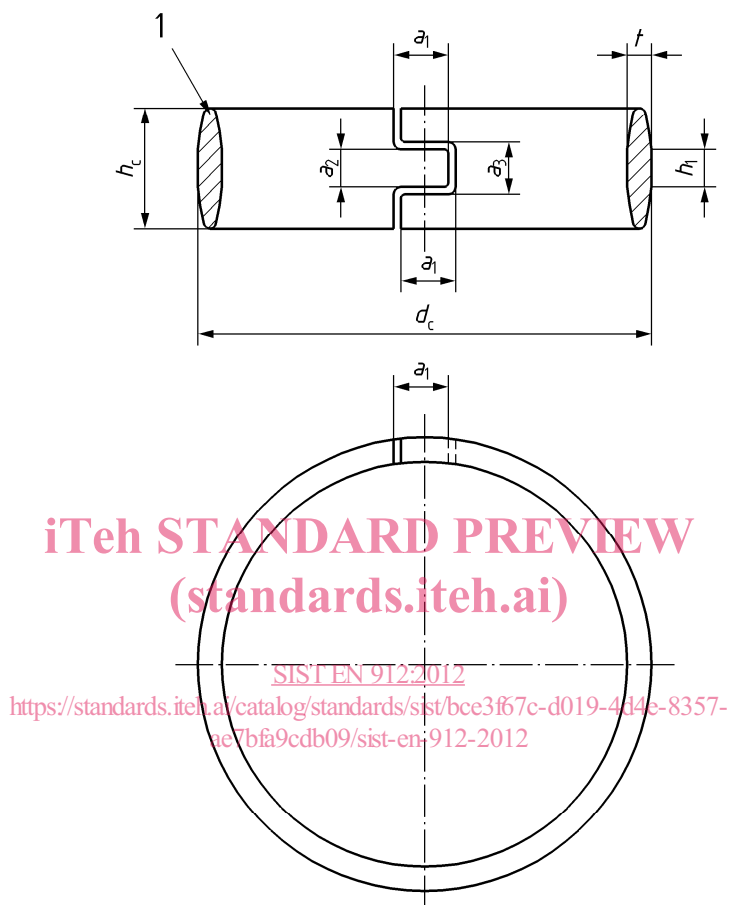
### A.2.2 Material

Ring connectors of type A2 are made of hot or temper rolled steel strip of steel alloy HRMS Grade Fe430 according to EN 10025-1 to -6.

### A.3 Type A3

#### A.3.1 Description and dimensions

A ring connector of type A3 (see Figure A.3) is a connector with double bevelled sides cut at one place on its circumference to form a tongue and a slot. The dimensions shall comply with Table A.3.



#### Key

- 1 round milled edge, radius  $r$

Figure A.3 — Connector of type A3